

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.

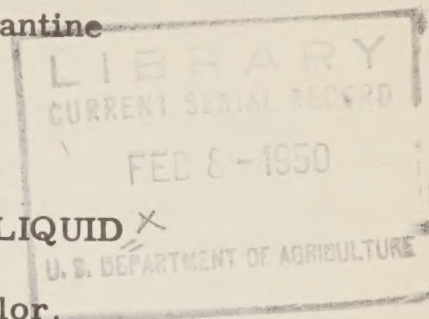




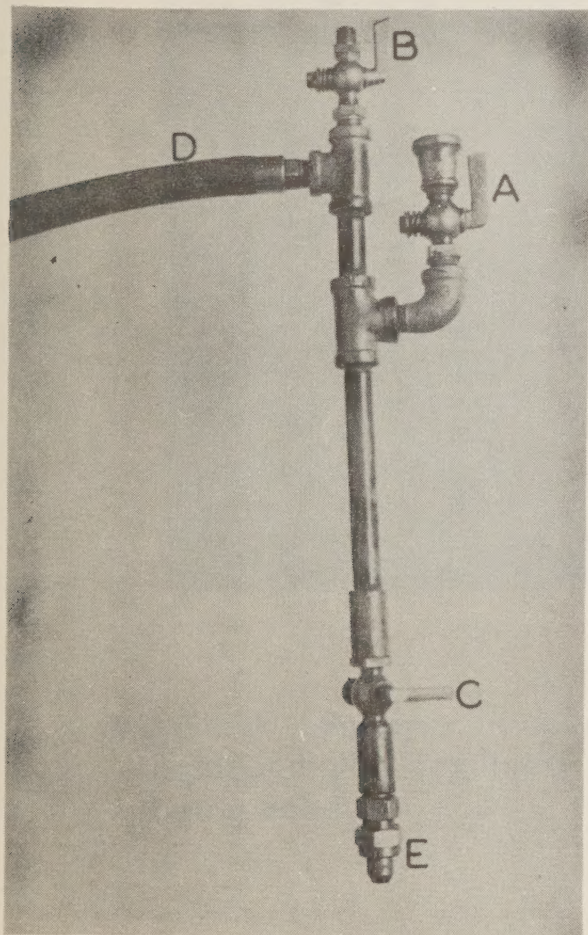
United States Department of Agriculture  
Agricultural Research Administration  
Bureau of Entomology and Plant Quarantine

<sup>3</sup>  
X A SPRAYER FOR DISPENSING  
SMALL MEASURED QUANTITIES OF LIQUID X

By Orin A. Hills and Edgar A. Taylor,  
Division of Truck Crop and Garden Insect Investigations



A sprayer for applying small measured quantities of liquid insecticide to individual plants has been devised and used successfully in plant-tolerance tests on cantaloups. With the technique used it is possible to spray single plants without affecting adjoining plants.



The sprayer is made from 1/4-inch pipe and various fittings, as shown in figure 1. The liquid to be dispensed is measured out and poured into the spray gun through stopcock A, which is fitted with a small funnel. A priming cock such as is used on some stationary engines or tractors is excellent for this purpose. During this operation the air vent, stopcock B, is open and stopcock C, which is for the release of the spray material, is closed. When the spray gun has been filled, stopcocks A and B are closed and pressure is applied from a compressed-air tank through the hose line D. Stopcock C is then opened and the spray released through the nozzle E. If desired, a cylinder of liquid carbon dioxide equipped with a suitable regulator may be substituted for the compressed-air tank for applying the pressure.

Figure 1.--Close-up of sprayer.





An open cylinder 13.6 inches in diameter and 18 to 20 inches tall is used to confine the spray material and thus protect adjoining plants. Since this cylinder encloses 1 square foot, dosages can easily be converted to an acre basis.

Figure 2 shows the sprayer in operation on a cantaloup plot being grown under lath shade. One operator is releasing the spray material while the other is measuring out the dosage for the next application. A carbon dioxide cylinder equipped with regulator valve and trip release is being used. For this spraying the regulator valve was set for a pressure of 60 pounds per square inch. After the spray material has been poured into the gun and all stopcocks closed, the trip release is opened momentarily before the spray is released. There is then sufficient pressure in the hose line to dispense the liquid in the spray gun.



Figure 2.--Sprayer in operation. Carbon dioxide tank equipped with regulator valve and trip release (circled) being used.

